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[Title in German of the object of the invention:]

Rohrkupplung

P I P E C O U P L I N G

Description

The invention pertains to a pipe coupling, having two coupling halves, partially inserted into one another, one of which forms a plug-in part, and the other one - a socket or bushing part, between which there is formed a circumferential gap, which is sealed by means of a sealing ring. Moreover, the coupling halves have - in the usual way - flanges, to which they are detachably connected to one another by means of screws, pipe clamps [clamping rings], or braces.

Characteristic feature of the invention is the fact that the axial extent of the plug-in part is short, that the annular segment between the annular groove and the end of the plug-in part has a smaller diameter than its sealing surface (area), and that the sealing surface of the socket part has an area segment, which conically widens towards the outer end in such a way that the two coupling halves can easily be opened by kinking or collapsing [buckling].

Such pipe couplings are used for detachable attachment of pipe segments to one another. By means of the pipelines, entirely different materials - first and foremost, gases and liquids - can be transported. If - as in the case of the supply of materials of construction - a rapidly hardening material, e..g, concrete, is to be conveyed through the pipeline, it is frequently necessary - when a stoppage of the transportation or delivery occurs - to dismantle the coupling so rapidly that the material, present in the pipeline, cannot yet solidify, or that the coupling - also after that - may easily be dismantled, if the material present in the pipeline, has already entirely or partially solidified.

Therefore, the objective of the invention is to create a pipe coupling, which can also easily be dismantled or disengaged when the medium, which is transported in the pipeline, has solidified. In order for the set objective to be achieved, it is proposed in accordance with the invention that in the generic coupling the axial extent of the plug-in part is short, that the annular segment between annular groove and the end of the plug-in

part has a smaller diameter than its sealing surface, and that the sealing surface of the socket [bushing] part has an area segment, which is conically expanding towards the outer end in such a way that the two coupling halves can easily be opened by buckling [kinking or being collapsed] (Figs. 2 and 3).

The pipe coupling in accordance with the invention achieves the set objective because as a result of the characteristic features of the generic pipe coupling, the coupling halves - after the connection means are loosened - can easily be disengaged from one another by buckling, and, indeed, also in that case when the medium, transported in the pipeline, has solidified.

The short segment of the plug-in part, which segment is inserted into the socket part, allows an easy buckling or kinking and loosening of the coupling halves. The easy loosening by means of kinking or buckling of the pipe coupling halves with respect to one another is facilitated, especially when - in accordance with an advantageous embodiment of the pipe coupling in accordance with the invention - the annular groove, into which the sealing ring is inserted, is arranged shortly in front of the end of the plug-in part of one of the coupling halves.

When - in accordance with yet another advantageous embodiment of the pipe coupling in accordance with invention - the lateral walls of the annular segment on the end of the plug-in part of one of the coupling halves are in such a way bevelled that the annular segment has steep flanks, like a

toothed wheel [gearwheel], and a cross-section, which is conically tapering in an outward direction, adhering residues of the medium, which is being transported in the pipeline, can also easily be knocked off after the solidification has taken place.

In accordance with yet another advantageous embodiment of the pipe coupling in accordance with the invention, the bevelling of the base of the socket part, which is conically tapered with respect to the axis of the pipeline segment, is used for the same purpose.

By means of the exemplified embodiment, diagrammatically represented in the drawing, the invention is to be elucidated in greater detail. In the different illustrations, analogous parts are provided with the same reference symbols.

In the drawing,

Fig. 1 is a longitudinal section of the pipe coupling in assembled state,

Fig. 2 is a longitudinal section of the pipe coupling after the means of connection are loosened, in a kinked or buckled state, while the coupling halves are still engaged with one another, and

Fig. 3 is a longitudinal section of the pipe coupling in detached state, while the two coupling halves are pulled apart from one another.

Fig. 4 is an embodiment of the pipe coupling, which is modified with respect to the one depicted in Fig. 1.

On the ends of both pipeline segments 1, 2, there is

attached a coupling half 3, 4 each by means of welding. The coupling half 3 forms a plug-in part 5, and the coupling half 4 forms a socket (bushing) part 6. The pipe coupling, is closed by means of a pipe clamp [clamping ring] 7 overlapping the flange of the coupling halves 3,4. In order for the pie coupling to be opened, the said pie clamp 7 should first of all be disengaged. In order for an opportunity to be provided for the coupling halves 3, 4 to be easily pulled apart after the pipe clamp 7 is loosened, a surface segment 9, which is conically widening in an outward direction, is designed on the outer end of the sealing surface 8 of the socket part 6 [sic!!!]. This surface segment 9 facilitates the buckling [kinking] of the socket part 4 with respect to the plug-in part 3 or vice versa, as best seen from Fig. 2.

In the plug-in part 5, a little bit before its end, there is provided an annular groove 10, into which is inserted a sealing ring 11. The flanks of the annular segment 12, remaining between the annular groove 10 and the end of the plug-in part 5, are bevelled while forming a cross-section of the annular segment 12, which cross-section is conically tapering in an outward direction.

These bevelled surfaces 12a, 12b facilitate the knocking off of adhering residues of the medium, which is being conveyed by means of the pipeline 1, 2.

Also, the base of the socket (bushing) part 6 has a bevelling 13, which conically tapers upon the pipeline axis. This

beveling accommodates then the sealing ring 11, and the diametrically opposite sealing surface 14 of the plug-in part 5 is smoothly cylindrical.

List of Reference Symbols:

1. Pipeline segment
2. Pipeline segment
3. Coupling half
4. Coupling half
5. Plug-in part
6. Socket (bushing) part
7. Pipe clamp [clamping ring]
8. Sealing surface
9. Surface segment
10. Annular groove
11. Sealing ring
12. Annular segment
- 12a Flank
- 12b Flank
- 13 Beveling
- 14 Sealing surface

Patent Claims

1. Pipe coupling, having two coupling halves, partially inserted into one another, one of which forms a plug-in part, and the other one forms a bushing [socket] part, between which parts there is formed a circumferential gap, which is sealed by means of sealing ring, **characterized in that** the axial extent of the plug-in part (5) is short, that the annular segment (12) between the annular groove (10) and the end of the plug-in [insertable] part (5) has a smaller diameter than its sealing surface (14), and that the sealing surface [area] (8) of the bushing [socket] part (6) has a surface [area] segment (9), which is conically widening in the direction of the outer end in such a way that the

two coupling halves (3, 4) can easily be opened by kinking [by being buckled] (Figs. 2 and 3).

2. Pipe coupling as claimed in claim 1, characterized in that the annular groove (10) into which the sealing ring (11) is inserted, is arranged a shortly before the end of the plug-in part (5) of one of the coupling halves (3).

3. Pipe coupling as claimed in claim 1 or 2, characterized in that the annular segment (12) on the end of the plug-in part (5) is conically tapered in an outward direction.

4. Pipe coupling as claimed in one of the claims 1 thru 4, characterized in that the base of the bushing [socket] part (6) is bevelled in a conically tapering way.

2 drawings attached thereto

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Fig. 1

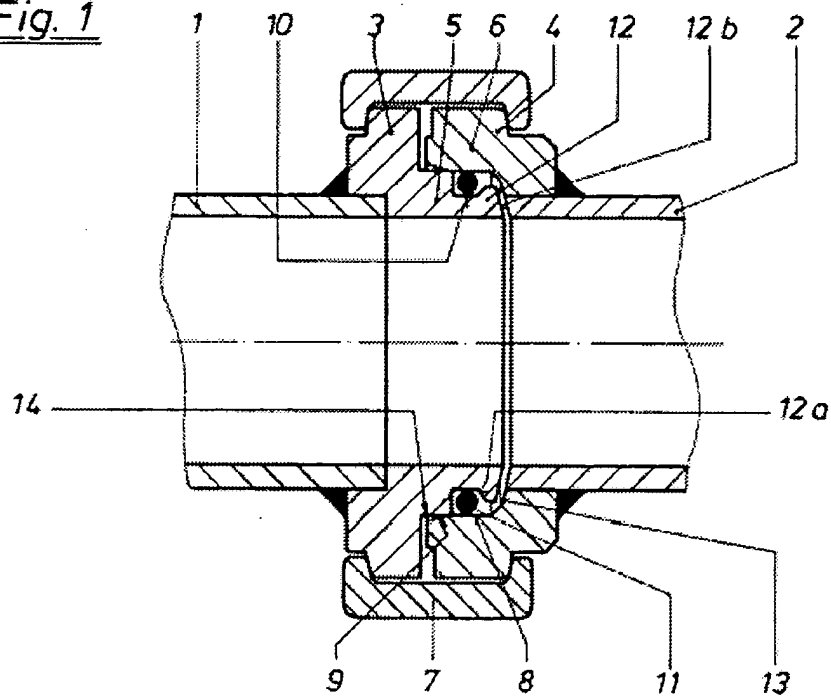


Fig. 2

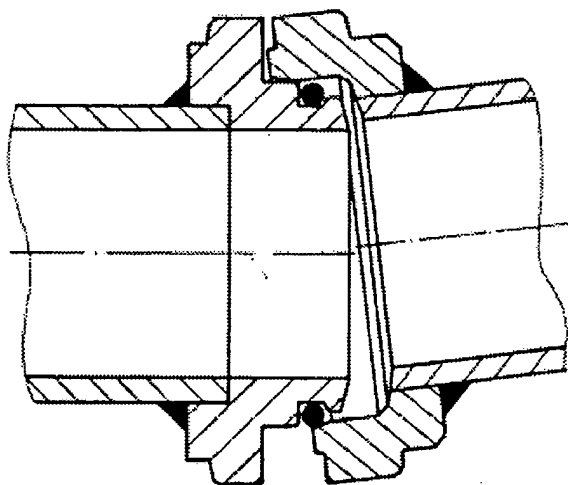


Fig. 3

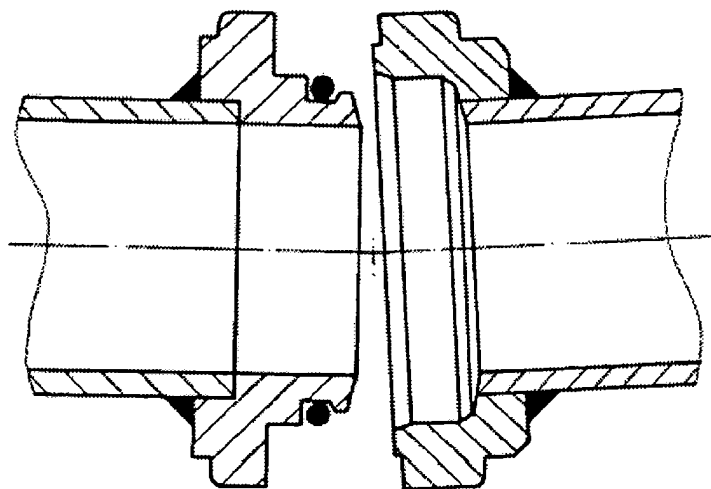
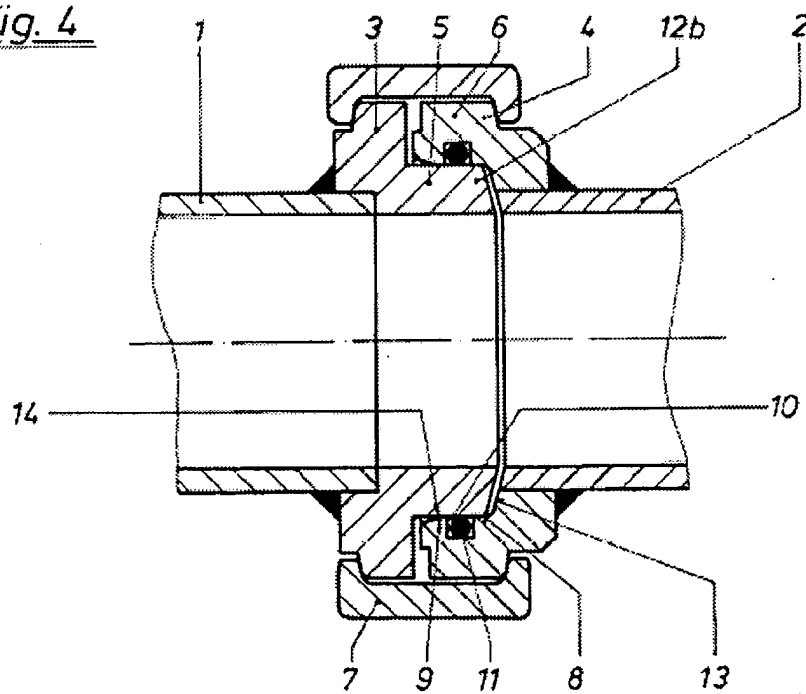


Fig. 4



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